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History and Challenges Ahead for General Surgery Training in East Africa

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Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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Review Article

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ABSTRACT

This review highlights the history of the commencement of training in East Africa. The challenges faced in setting up a recognised training curriculum in General Surgery are outlined. The supply of health professionals with surgical skills is disproportionate to the world burden of surgical disease. The disproportion between the burden of surgical disease and the low numbers of trained personnel is more pronounced in developing low income countries. General surgery is being left in referral hospitals with few staff as surgical subspecialisation is gaining momentum. The provision of essential general surgery management is therefore below par which is the responsibility of the General Surgeon. In order to bridge the discrepancy training of more general surgeons is required. Specialist surgeons should also be trained first as general surgeons as it will give them the ability to respond to a general surgical emergency when practising as specialists and will provide them with a good overall understanding of the needs in general surgery.

Keywords: Surgical Training; East Africa; Subspecialty training; general surgeon.

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1. INTRODUCTION

Many patients and the general public consider the quality of surgical training (certificates, diplomas and degrees) and outcome of his/her operations as important in defining a good surgeon. However the outcome of his/her operations is surely more important. This is the reason why many accredited surgical residency programmes insist on case operation logs for surgical residents during training. The reason being that the more one operates the better one becomes in terms of acquiring skills. It is now accepted that it is not the quantity of surgical procedures that matters but it is more the quality of surgical procedure time that really matters [1].

Any formal surgical training always started with general surgery training. Currently many residents transit through general surgery to enter subspecialty training or enter directly in to subspecialty training. As soon as one finishes with general surgery training up to 80% of general surgery residents join subspecialty fellowships [2-3]. It is a matter of debate in the scientific world, whether general surgery adequately prepares residents for a subspecialty fellowship [4-5].

Whilst an adequate number of specialists and sub-specialists providing tertiary surgical care is being provided in training systems in developed countries, this has denied the all-important general surgeon to the rural population [1-2]. When one considers East Africa and Sub-Saharan Africa this becomes more of a concern. Statistics have shown that Sub-Saharan Africa has the lowest number of health professionals yet it bears the greatest burden in surgical disease [6-7].

2. DISCUSSION

2.1 History of Surgical Training in East Africa

The early surgeons fell into five categories. The government surgeons were mainly of British descent with a few Asians and occasionally an Irishman. These surgeons possessed the Diploma of Fellowship of at least one of the Royal College of Surgeons. Surgeons working in private practice constituted the second category and these were British trained. Many of these surgeons practised in Nairobi, Bulawayo, Salisbury and Mombasa [1].

The third category of surgeons were British and some South Africans with British qualifications and worked in mines in Southern and Northern Rhodesia. The colonial government had refused to practically register anyone who did not possess a British surgical qualification or an “equivalent” issued from the British empire [1,8].

Surgeons working in Missionary hospitals constituted the fourth category which were made up of continental Europeans and a few Americans. These surgeons were allowed through “licensing” to practise as surgeons. It was allowed to employ these non-registrable surgeons when an institution fails to find a registrable medical practitioner [1]. The University lecturers from the only medical school of Makerere University in Kampala, Uganda at the time constituted the smallest group of surgeons. These lecturers were led since the late fifties by Professor Ian McAdam and his assistant John Cook. Professor McAdam’s foresight influenced what had been happening in surgical training in these fifty years. Jan Borgstein was a Dutch trained surgeon working in Blantyre, since 1962. He worked in government, missionary and private hospitals as the only surgeon in Nysaland [1,9].

In East Africa, Uganda tended to be the most liberal and progressive country in education. Undergraduate education had been upgraded at the Makerere University medical school to obtain recognition of the medical degree. In the fifties it was a diploma, then a licentiate, then a University of London degree and finally the University of East Africa, MBChB. This undergraduate qualification was recognised by the General Medical Council in the United Kingdom. After Makerere University accomplished the difficult feat for recognition of the East African degree it began to consider specialist training in surgery [1].

In Kenya, the founders of the Association of Surgeons were convinced that the future of surgery depended on recruiting Kenyan doctors into the surgical specialty. Whilst the Zanzibar and Tanganyika governments were ready to sponsor selected nationals for surgical training. Eventually the medical school of Makerere University entered negotiations with the Royal College of Surgeons, various administrations of hospitals in the United Kingdom and the General Medical Council. Through a large number of conncetions which Makerere University

developed the first East Africans were placed into positions in surgical training in the UK [1,9].

In 1928, Mr. Isidore Rosen was the first Southern Rhodesia born surgeon to obtain the Fellowship from the Royal College of Surgeons of Edinburgh. Whilst in 1971, Oliver Munyaradzi, a surgeon from Zimbabwae was the first surgeon to obtain his FRCS from the Royal College of Physicians and Surgeons of Glasgow [8].

In 1960 two East Africans, Ugandan by nationality, Sebastian Kyalwazi and Alex Odonga returned from Edinburgh after obtaining the FRCS diploma. In 1963 the first Kenyan to obtain the Fellowship from the Royal College of Surgeons of Edinburgh was Wilson Warambo. John Omari was the first Tanzanian who first went to the United States, then to Edinburgh and finally obtained the Fellowship from the Royal College of Surgeons in Ireland [1].

Hastings Kamuzu Banda was a Malawian and obtained his Edinburgh qualifications and studied in the USA. On returning to Ghana he was struck off the Medical register for illegal business practices by Charles Easnnon (first Ghanian Surgeon, Edinburgh fellow and Chairman of the medical council of Ghana). He eventually joined Kwame Nkrumah in Ghana eventually on his way to lead Nyasaland to independence [8].

2.2 The development of Local Surgery Training Programmes

A larger second group of East African surgeons were placed in training positions by the mid 1960's. However it did become obvious to the Council of the Association of Surgeons and to Professor McAdam that a local training surgery programme was necessary. The compelling reasons included the high expense to send eligible candidates abroad to the United Kingdom and also the increasing competition from other Commonwealth countries was considerable. Less resilient surgical trainees would be placed in peripheral surgical jobs where they were less likely to pass the examinations. Even after passing these examinations these surgical trainees would have obtained little surgical experience and therefore when they come back home this created problems [1].

Readaptation to the local conditions and recovering from cultural shock were other reasons for developing local training programmes. The pathologies of surgical conditions also differed widely from surgical conditions encountered in developed countries. The prevalence of cosmopolitan surgical diseases was not as marked as it is today in East Africa. Whilst in principle all surgery lecturers at Makerere University agreed to local training programmes it remained unclear how this programme would be implemented. Professor McAdam believed that Makerere University should have a surgical programme and the surgical qualification would become a surgical postgraduate degree. This degree will be associated with a reputable institution. However Professor McAdam's endless talks with Faculty Board and Senate did not convince other lecturers and professors at Makerere University. Professor McAdam's enthusiasm slowly persuaded the idea of having an "MMed (Surgery)" degree [2-3].

The Colleges were eventually recruited to help the University set up a training programme. The curriculum was developed and the Government paid bursaries to medical officers whilst in postgraduate training. However at the time the Government disliked the idea of paying salaries to postgraduate students. The University objected to Prof. McAdam's proposal of students spending six months of the two clinical years in an up-country hospital. On the other hand the government felt it would be captive for surgical registrars and hence liked the up-country rotation [3].

The MMed Surgery course finally started and in 1970 the first group of MMed Surgeons graduated. Stanley Tumwine from Uganda, Surjit Singh Sahota of Tanzania and MK Jeshrani of Kenya were the first surgeons graduating from Makerere University. The Royal College of Surgeons honoured its agreement and allowed the Makerere University graduate to sit the FRCS General Surgery examination without sitting the primary examination. The Makerere surgeons did well in the examinations and Prof. McAdam won against all odds [1].

Eventually other national MMed Surgery programmes started to mushroom particularly in Nairobi and another in Dar es Salaam. In 1975, Gerishom Sande, Peter Odhiambo, Peter Ochola-Abila and Ben Mbindyo became the first Nairobi group which graduated with an MMed Surgery degree. In 1975, William Mahalu became the first surgeon from Dar es Salaam [1].

In 1969 the University of Zambia, recruited Gordon Cook, Maurice King and Loeffler IJP to

establish the Postgraduate Surgery Training Programme for their medical school. Loeffler IJP stated in his address that a Medical school which does not have definite plans to establish a postgraduate degree structure is a rather hopeless situation. He stated that surgeons in Zambia and in East Africa require a broad based training throught the district and provincial hospitals in the country. This type of training is not available in developed countries in the Western world. In 1985, the first Zambian surgeon, Girish Desai graduated with an MMed in Surgery [1].

Due to the efforts by Lawrence Levy, an MMed Surgery programme was established in the medical school of Zimbabwae. In 1988, the first surgeon from Zimbabwae, Salathiel Mzezewa graduated as an MMed in Surgery. Other MMed Surrgery regional training programmes emerged from other countries in East Africa thanks to the idea pursued and conceived by Professor Ian McAdam [1,4].

2.3 The development of the College of Surgeons of East, Central and Southern Africa

Support from a group of visionary surgeons and the Steering committee of the Association of surgeons of East, Central and Southern Africa (ASEA) in 1996 recognised that the quantity and quality of surgical services was inadequate in the region. These visionary surgeons eventually became Foundation Fellows of COSECSA [10].

Access to Specialty Training in General Surgery in the United Kingdom was becoming very restrictive. Apart from this the training of specialist surgeons in the region was limited to MMed Surgery programmes. Identification of a common surgical training programme was needed. This training would be undertaken in training institutions throughout East, Central and Southern Africa with common examinations and an award of a regionally and internationally recognised surgery qualification. In order to fulfil this need, the College of Surgeons of East, Central and Southern Africa (COSECSA) was formed [10].

The College was approved by the Deans of the Medical Colleges, Commonwealth Regional Health Community Secretariat and the Ministers of Health of the ECSA countries. In 1997 the Royal College of Surgeons of Edinburgh assisted in setting up the surgery examinations of the College and surgical training programmes. The publication of the College constitution and examination syllabus was prepared [2,10].

In December 1999 the official inauguration of the College took place in Nairobi, Kenya. The foundation fellows elected the Council of the College in the first Annual General meeting in Lusaka in December 2000. At this meeting the COSECSA constitution and syllabus were prepared. Following request of the regional Health Ministers the College was officially changed to the College of Surgeons of East, Central and Southern Africa (COSECSA) [10].

In the College Annual General Meeting held in 2002 it was agreed that in 2003 the first Membership of the College of Surgeons Examinations would take place and the Fellowship of the College of Surgeons Examinations would take place in 2004. The COSECSA Membership and Fellowship examinations were then held annually. The Association of Surgeons of East Africa and COSECSA held parallel Annual General Meetings during this period until they merged to form a single entity in 2007. The College of Surgeons of East, Central and Southern Africa developed a new Constitution [10].

The Royal College of Surgeons in Ireland and COSECSA entered in to a collaboration programme which started in 2008 and this partnership continues to this day in development of surgical training and examinations in the COSECSA region. In 2009 the COSECSA secretariat was established in Arusha, Tanzania where all the administration of the College is situated till this day [10].

2.4 Surgical Services in the Developing World

In the near future the need for surgical services in Sub-Saharan Africa will increase considerably. Galukande et al have observed that the majority of cases which need elective surgery eventually are referred to higher level referral hospital facilities [11] Accurate data on the low current surgeon workforce have previously been limited in East, Central and Southern Africa. However, a study by O'Flynn et al., showed that there is a total of 1,690 practising surgeons in the region which gives a regional ratio of 0.53 surgeons per 100,000 population. More than half (53%) of surgeons in the region are general surgeons [12].

In general there is a tendency for surgical conditions to be neglected in healthcare systems in Sub-Saharan Africa [11.13]. There is a low surgical output due to limited access to surgical services compared to richer nations [12,14]. The reasons for limited access to surgical services are numerous however are not limited to the reduced surgical workforce. Lack of adequate transportation of surgical patients to district hospitals and limited surgical supplies are other reasons [15-16].

Unfortunately the increased need of surgical services will therefore result in a delay in surgical care resulting in most operations being performed as emergencies due to complications resulting from elective surgical diseases left for too long unattended. These include many patients presenting with rectal tumours and colon tumours which are often at an advanced stage when referred from district hospitals resulting in them presenting as an emergency with large bowel obstruction. Many of these emergencies will need to be handled in the referral hospitals due to the reduced general surgical workforce in district hospitals.

The integrated essential and emergency surgical care proposed by WHO has been criticized for not addressing the surgical needs in the rural parts of developing countries. This criticism has been particularly in quality improvement and community based follow-up in rural parts of Africa [6]. There is a huge gap between the supply and need of surgical care especially in East Africa and therefore Maru et al have proposed a global massive scale-up of surgical capacity to reduce the gap on the accessibility of surgical services [7,12].

A reduced volume of training, civil war, violence, brain drain and the high rates of road traffic accidents in Sub-Saharan Africa make the situation even worse [7,12,13]. Many mitigation strategies have been proposed to address this issue. The Bellagio essential Surgery group involves a strategic 4-pillar intervention designed to train physicians, nurses and clinical officers to perform the surgical work normally carried out by surgeons [14,15] The ample supply of health workers with high quality surgical skills constitutes the 3rd pillar of the Bellagio essential Surgery group [12] The group recommend that in a rural health facility the presence of a surgeon to overlook surgical care is paramount even though the facility does not need a surgeon to actually perform the surgical task [12]

2.5 The way Forward for Surgical Training in East Africa

In order to meet the population need for surgical care, Uganda and the rest of East Africa has to train the required number of general surgeons. As in the developed world, specialty training is the trend in surgical training. Many referral hospitals in East Africa mainly through COSECSA programmes however also through MMed Surgery programmes directly admit residents in to orthopaedic surgery, plastic surgery, ENT surgery, neurosurgery, cardiothoracic surgery and general surgery. Apart from this upon graduation there is a tendency for general surgery residents to join subspecialty fellowships in Upper GI surgery, colorectal surgery, Hepatopancreaticobiliary surgery, endocrine surgery, breast surgery or vascular surgery upon graduation.

In the developed western world the once saturated field of General surgeons is becoming extinct however in Uganda and other East African countries there is a loss of general surgeons even before there is enough of them [2,13,14]. Quality of care is improved to international standards with specialisation. However at district level the general surgeon is still needed to handle general surgery cases. During the referral chain there is a delay in the elective surgical cases. The delays in referrals result in complications which results in them being operated on as emergencies. The surgical procedure as an emergency may not necessarily be done by the surgeon [13,17-19]. However one should hope that either in consultation or in the presence of the surgeon the surgical procedure should take place.

In district hospitals upcountry the presence of a general surgeon is not guaranteed. In the regional referral hospitals all surgeons have specialised and there are few surgeons to run lists labelled ‘general surgery’. These general surgeons are available for consultation in the case of general surgical emergencies.

In our regional referral hospitals the presence of a specialist surgeon with a background of training in general surgery has an added advantage. It is also an advantage especially if the hospital is training and is affiliated to a University. These specialists may advise the general physician appropriately and are trained in the management of several subspecialty emergencies.

The author feels that every surgical resident should train as a general surgeon before undertaking a Fellowship in a sub-specialty. In two ways this will bridge the gap in the general population of general surgeons in two ways. Staff may work as a general surgeon in the interlude between general surgery and prior to commencing subspecialty fellowship. This interlude of 1-2 years will result in a licensed general surgeon. Advanced surgical services will be provided by the general surgeon which is akin to what medical interns carry out for two years before becoming medical officers. The transit to subspecialisation may undergo attrition because of financial fortune along the way or a change of mind and therefore an extra general surgeon is admitted to the workforce.

Subspecialisation does not always result in better patient outcomes and therefore it is not always the better option [20] Subspecialisation has been associated with a high cost of care, high surgeon to patient ratio and surgical emergencies especially in trauma are not being adequately covered [21]

4. CONCLUSIONS

As more surgeons opt for subspecialisation general surgery as a specialty is losing grip. In rural Uganda and other East African countries this has resulted in surgical care being neglected. Specialist surgeons should be trained in General Surgery first and they can provide invaluable advice to medical officers carrying out these surgeries in up country district hospitals. A system should be in place for surgeons to train in General Surgery before sub-specialty fellowship training. This will give these surgeons adequate experience in General Surgery emergencies and the supervision of surgical care.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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